

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). A reaction product comprising at least

a) acrylic acid or methacrylic acid or a mixture of acrylic acid and methacrylic acid and

b) a (meth)acrylic ester of substituted or unsubstituted phenol, C₁-C₈-hydroxyalkylbenzene or C₁-C₈-hydroxyalkoxybenzene and methyl(meth)acrylate in the ratio (percent by weight) of from 7.1:92.9 to 50:50,

5-90% of the acrylic or methacrylic acid units having reacted with a glycidylvinyl compound and wherein the ratio (percent by weight) of component a) to component b) is from 80:20 to 20:80.

Claim 2 (original). A reaction product according to claim 1, wherein component a) is methacrylic acid.

Claim 3 (original). A reaction product according to claim 1, wherein the (meth)acrylic ester of component b) is benzyl methacrylate.

Claim 4 (original). A reaction product according to claim 1, wherein the glycidylvinyl compound is glycidyl methacrylate.

Claim 5 (cancelled).

Claim 6 (original). A reaction product according to claim 1, wherein the molecular weight of the reaction product is 10000 – 120000 g/mol.

Claim 7 (original). A reaction product according to claim 1, wherein the molecular weight of the reaction product is 20000-90000 g/mol.

Claim 8 (original). A reaction product according to claim 1, which has an acid number of 0.4-5.0 mol/kg, referred to the reaction product.

Claim 9 (withdrawn). A photopolymerizable composition, substantially comprising

- i) a reaction product according to claim 1,
- ii) a monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
- iii) a polymerization initiator or initiator system which produces free radicals, cations or anions and can be activated by actinic radiation and,
- iv) if desired, an organic or inorganic filler.

Claim 10 (withdrawn). A photopolymerizable composition, substantially comprising

- i) a reaction product according to claim 1,
- ii) if desired, a monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
- iii) a polymerization initiator or initiator system which produces free radicals, cations, or anions, and can be activated by actinic radiation,
- iv) if desired, an organic or inorganic filler,
- v) a thermal polymerization inhibitor and
- vi) a solvent or solvent system.

Claim 11 (withdrawn). A photopolymerizable composition, substantially comprising

- i) 15-70% by weight of the reaction product according to claim 1,

- ii) 0-30% by weight of monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups,
- iii) 0.1-15% by weight of a polymerization initiator or initiator system which produces free radicals, cations or anions and can be activated by actinic radiation,
- iv) 0-60% by weight of an organic or inorganic filler,
- v) 0.01-0.5% by weight of a thermal polymerization inhibitor and
- vi) 20-80% by weight of a solvent or solvent system,

the percentages of the components being based on the total weight, with the proviso that the sum of the percentages by weight is 100.

Claim 12 (withdrawn). A process for producing an etch resist image or solder resist image, comprising the process steps of:

- I. Application of a photopolymerizable composition according to claim 10 to a substrate;
- II. removal of the solvent from the applied composition with formation of a film of the photopolymerizable composition on the substrate;
- III. if desired, exposure of the coated substrate to actinic radiation;
- IV. if desired, removal of the unexposed parts of the coating with the aid of an alkaline-aqueous or organic solvent with baring of the substrate; and
- V. if desired, thermal curing and, if desired, UV curing of the coating remaining on the substrate.

Claim 13 (withdrawn). A process according to claim 12, wherein the exposure (III) is effected with the aid of a photomask or directly by means of a laser.

Claim 14 (withdrawn). A process for producing an etch resist image or solder resist image, comprising the process steps:

- I. Application of a photopolymerizable composition according to claim 10 to a substrate by means of an inkjet method;
- II. removal of the solvent from the applied composition with formation of a dried photopolymerizable composition on the substrate;
- III. if desired, uniform exposure of the coated or structured substrate to actinic radiation; and
- IV. if desired, thermal curing and, if desired, UV curing of the coating remaining on the substrate.

Claim 15 (withdrawn). A photopolymerizable element comprising a substrate which carries a photopolymerizable layer, substantially comprising

- A) 25-85% by weight of the reaction product according to claim 1,
- B) 5-40% by weight of monomeric or oligomeric acrylate having at least two ethylenically unsaturated, terminal groups;
- C) 1-25% by weight of an addition polymerization initiator or initiator system which produces free radicals, cations, or anions and can be activated by actinic radiation;

D) 0-60% by weight of an organic or inorganic filler and

E) 0.025-1.0% by weight of a thermal polymerization inhibitor;

the percentages of the components being based on the total weight, with the proviso that the sum of the percentages by weight is 100.

Claims 16 (withdrawn). A photopolymerizable element according to claim 15, wherein the thickness of the photopolymerizable layer is 3-50 μm .